THE TECH

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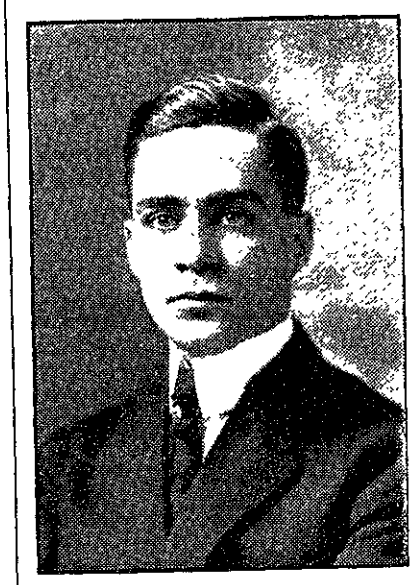
CURTIS C. WEBB, BUSINESS MANAGER



GARNETT A. JOSLIN, STAGE MANAGER

FREDERICK H. DEWEY, GEN. MANAGER

GEORGE C. WESTERVELT, AUTHOR

OVER THE GARDEN WALL CONTAINS NEW DEPARTURES.

FIRST SCENE IN FRATERNITY HOUSE

James Francis to Coach Tech Show Again This Year.

Great things are expected of the new Tech Show "Over the Garden Wall." Work on it has been going on for two months now and it is coming along well. The author, George Conrad Westervelt G, has done work of the kind before and thoroughly understands his business. Westervelt graduated from the United States Naval Academy at Annapolis where he excelled in literary work. He is taking a graduate course in Naval architecture at the Institute.

Westervelt wrote a large number of lyrics for last year's show "William, Willie and Bill," among them the opening chorus and a trio by the principals which was a decided hit. He also wrote a dialect song for the play last year and is preparing several for the new play which promises fair to equal anything in the previous shows.

James Francis, who has so successfully coached the show for several years, is back again this year. On account of his work with the bank officers he is in town early and able to help along the play for a longer time than usual. Francis decides about the selection of the lyrics and gives out new subjects for them, so there is a decided advantage in his being in town early, so that work on these may progress. The rehearsals are to begin earlier this year than usual, that is, as soon as possible in the second term, probably about the middle of February. It is expected that even a bigger crowd than usual will come out to try for the parts as the trip to Northampton seems to be a decidedly popular feature.

The show departs this year from the usual in having the scene of the first act laid in a fraternity house in Newbury street. The other scene is at a residence in Brookline where the garden wall is introduced. There is a large field for song and lyric writers in the new play which ought to bring out some good productions. Some of these have come in already but the competition has not yet been announced and will depend somewhat upon the music.

HOCKEY TEAM PLAYS HARVARD.

Hard Game This Afternoon.

Tech will meet Harvard at hockey this afternoon at Cambridge. The lineup of the Tech team is as yet uncertain as there has been no opportunity for regular practice and no games have been played. Fifteen men have come out for the team and there has been a little work done. The outlook for a fair aggregation is good though the chances against the Harvard team are not the best.

BASKET BALL TEAMS LOSE IN PLUCKY GAMES.

FIRST AND SECOND TEAMS TIE HARVARD.

Lose in Extra Periods. Hargraves and Schatz Hnrt.

After tie games, both the first and second basket ball teams lost to Harvard at Cambridge last night.

During the first half of the first team game Tech outplayed Harvard and at the end led with a score of 12 to 6. In the second half the play was hard. Hargraves, who had been making most of Tech's points, was severely injured in the head by a collision with a Harvard play. However, after being bandaged up, he refused to stay out of the game. Harvard braced up at the end and the final score was 18 to 18.

The teams decided to play five minutes longer to decide the tie. After some very fast playing both sides threw a basket, making the score 20 to 20. Then it was agreed to make the next point determine the game. Consequently both sides strove fiercely to make this necessary point.

Cahill made many attempts at the basket but the Harvard interference was too strong. Finally Allen, Harvard's right forward, threw the deciding goal, winning the game by a score of 22 to 20 in favor of Harvard.

The line-ups were as follows:—

HARVARD 1ST.	M. I. T. 1ST.
Allen rf	lb. Nichols
Currie lf.	rb. Lamont
Browne c.	c. Wentworth
Brooks lb.	lf. Cahill
Almy lb.	rf. Hargraves

Goals from floor, Allen 2, Almy, Brooks 4, Hargraves 3, Cahill 4, Wentworth 2. Goals from fouls, Allen 2, Currie 2, Cahill 2. Referee, Archenstein. Time, 15m. halves.

In the second team game at the end the score stood 7 to 6 in favor of Harvard. In the second half Tech braced and tied the final score, 12 to 12. Harvard won the play-off. The final score was 14 to 12.

O'HEARN CHOSEN CAPTAIN.

To Lead 1910 Baseball Team During the Coming Season.

At a meeting of the 1910 base ball team Saturday William J. O'Hearn of Brookline was elected captain of the team for the season 1908.

O'Hearn played on the team all last season, holding down the position behind the bat, occasionally playing at left field. His batting was good and his play was remarkably free from errors. He prepared for the Institute at Brookline High School where he caught on the school team for two years.

COPLEY HALL WILL BE USED NEXT YEAR.

ROOMS FOR DINNERS AND MEETINGS.

Mr. McIver Says That a Lunch Room Can Be Installed Wilhout Much Expense.

Without a doubt Copley Hall will be used for student activities next year. That it can be used next term appears impossible for the present holders of the lease must be given time to adjust their affairs.

In regard to serving meals in Copley Hall, Mr. McIver, chef at the Union says:

"In making a survey of Copley Hall building I find that Copley Hall would be large enough to seat 500 students very comfortably. Then, opening off from Copley Hall is Allston Hall, where 300 could be seated at long tables.

"There wond have to be some changes in the kitchen before any kind of service could be given. The range from the Union could be installed in the cook room, which is separated from Allston and Copley Halls by a room suitable for a serving room. In the cook room there would have to be installed dish sinks and racks, and some steam and gas piping would be necessary.

"An ice box would be absolutely necessary and a studio next to the cook room could be used for that purpose. in the serving room shelves would be needed for dishes. The room is fitted with plenty of serving tables.

"I find there is a basement the entire size of the building which would be admirably used for storage for any amount of vegetables and provisions which could be bought in quantities at such times as they are cheap and thus save an appreciable amount necessarily expended in buying in small quantities as is the case at the Union at the present time.

"The engineer in the Copley Building tells me that at a small expense some of the steam that is wasted in the engine room of the Institute could easily be piped into the kitchen and used to keep food warm. There are rooms at the north end of the building that could be utilized for smoking rooms and made very attractive and comfortable. There are other rooms, now used for the larger studios, that would make excellent dining rooms for the clubs with smaller membership.

"For Kommers, Copley Hall would furnish an ideal place and they would not be disturbed by the noise from the kitchen, as it can be shut off from the rest of the building.

"It is very sure that if the Union were to move there would be many things needed that have not been thought of, but with a small outlay I think that we could get along very well for the present."

A PLAN FOR EXECUTIVE TRAINING.

GRADUATE POINTS THE WAY.

Utilization of Student Activities to Give Institute Necessary Breadth.

To give the technological student an executive training in the midst of his scientific courses has been a problem that has long been worked upon by many educational thinkers. Probably the best plan ever put forward to fill this undoubted need is that given in the article by Isaac W. Litchfield 1885 in the Technology Review.

This plan has never been brought to the general notice of the student body. The relation of this plan to the proposed Union is self-evident. One of the biggest problems to be met in bringing the Union to an actuality will be the managing and financing of the institution. The taking part in the management of such an institution would be valuable business training for Technology students.

A reprint of this article is given below.

AN APPRENTICESHIP FOR BUSINESS.

From infancy up to the time when the young man leaves his books and teachers to go out into the world his mental development is accomplished by gradual steps which are carefully gauged with reference to his possibilities for assimilation and his growing experience.

The kindergarten prepares him for his first competitive relations with his fellows, and gives him a knowledge of elementary principles which would otherwise be acquired only through tribulation; but, when he has passed a decade with no real responsibility, and has been measuring himself with children, schoolboys, and college mates, judging himself by their standards and gauging the realities of life by their ideals, he is unceremoniouslyy set afloat on the turbulent waters, with compass and charts, it is true, but with no practical idea of how to allow for leeway or tidal currents. And so we see the boats diverge, some to strike the rocks, some to circle about aimlessly, never to reach port, and some few borne by favoring elements to the haven of their desire.

It is apparently assumed that an Institute student, with his equipment for practical work, is better fitted for this crisis than his college brothers. Is he not an engineer? Has he not had the benefits of strenuous study and laboratory work? Is he not used to drudgery and obedience to orders? All that is true, and in it lies the greater danger, for he is inclined to accept the drudgery as his whole duty; and, following his analytical training, he looks down and into rather than up and out. The fog is about him, his eye is on chart and compass, and he is oblivious to the echo from a threatening cliff directly in his course, simply because he is too absorbed in theory to use one of his common senses.

(Continued on page 4.)

THE TECH

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Wednesday, January 8, 1908.

ISSUE BY CANDIDATES.

In order to give the candidates for the Board of Editors an opportunity to gain experience in publishing The Tech, the Friday's issue will be published by the News, Business and Circulation Staffs, and the candidates for the various positions.

William D. Green 1909 has been made temporary Editor-in-Chief. The acting News Staff will be represented by J. N. Stephenson 1909, D. Clapp 1910, D. R. Stevens 1911, L. G. Glazier 1911, L. A. Dow 1910, R. H. Ranger 1911, G. C. Kenny 1911, R. H. Lord 1911, H. J. Wood 1911, G. B. Forristall 1911, and B. Lawrence 1911. G. A. Woodruff 1911, W. R. McCune 1911, and G. B. Curven 1911, will attend to the business end, and the Circulation Staff will include M. W. Hopkins 1911, A. W. Yearance 1911, W. C. Wilson 1911, and R. O. Wood 1911.

STUDENTS' NEEDS.

The need of giving to the Institute student a training in business responsibility has long been evident to educators, employers and manufacturers. There is little or nothing in the present curriculum that goes toward training a student in this direction. How to give this training has long been a puzzle to those deeply interested in the policies of the school. The present curriculum is crowded to the limit of the student's endurance and anything added would be like the proverbial straw.

It would be hard to conceive of a subject or set of subjects that would instill into the student that sense of responsibility which is so necessary to the man in the industrial and commercial world. There are, however, at hand, as Mr. Litchfield points in his article, the student enterprises which will give to the student a collateral preparation for the responsibilities of life.

Only those graduates who have taken part in student activities know what a great help it is to have been on a committee, a board of The Tech or Technique, a member of the show management. A correct duplication of the troubles and trials in actual industrial life is given in these enterprises.

Added to the training in executive work this plan will also throw the students into contact with each other in something more than a social way. This close contact of individuals in the working for the common end or issue is perhaps closer than can be brought about in any other way.

As has been pointed out in other columns, Mr. Litchfield's plan would be admirably adapted to the management of the temporary Union or Walker Memorial in the Copley Hall building. To have the building governed and run by student management may be seriously objected to on practical grounds, but if Mr. Litchfield's plan is at all practical, which has been admitted by authorities, it can be applied to this enterprise.

That an institution should furnish the means to acquire broad-mindedness and citizen spirit is very ably put forward in reprint of Mr. Munroe's article in this issue on "The Ideals to be Placed Before Young Engineers."

Mr. Munroe points out very clearly that an opportunity must be given to the student to develop himself into a wide-awake interested man, interested in matters that have to do with the body-politic, to do with the common good.

At present it is too true that the Institute students are only interested in themselves and their own work. This has been brought about by the character of the Institution and instruction rather than by the character of the students.

Nothing better could be imagined to bring the students out of their self-centered condition than the plan suggested by Mr. Litchfield. Even if this plan is not adopted the development of the necessary aims pointed out by Mr. Munroe will be greatly facilitated by the temporary Union.

ALUMNI CLUB FORMED.

M. I. T. Banquet at Syracuse.

At a banquet held in Syracuse, N. Y., last December, 25 alumni of Tech formed the M. I. T. Club of Central New York. The following officers were elected: president, W. E. Hopton 1891; vice-president, F. D. Ingalls 1901; secretary-treasurer, I. S. Merrell 1896. The officers, with F. T. Taylor 1903, and E. M. Smith 1906, constitute the board of directors.

PORTFOLIO COMMITTEE ELECTED.

The following men have been elected to the Senior Portfolio Committee:—W. E. Barton, S. H. Daddow, R. W. Ferris, H. Webb, and E. I. Williams.

NOTICES.

1911 FOOTBALL.—Proofs of picture at Cage. See them before 4 P. M. today.

Prof Derr will give two lectures on color phtography on Fridays, Jan. 10 and 17, in room 22 Walker at 4.10 P. M. All interested are invited to attend.

CROSS COUNTRY.—The Cross Country Team will meet Thursday at 1.00 P. M. at Notman's, 3 Park St. for picture. The captain for next year will be elected at this time.

Y. M. C. A.—Rev. Wm. T. McElveen of the Shawmut Congregational Church will address the weekly Y. M. C. A. meeting tomorrow in Trinity Church Library. Dr. McElveen is a man with broad views and a good talk on a live subject is assured.

SOCIETY OF ARTS.—The 643d regular meeting of the Society will be held in 22 Walker, Clarendon Street, on Thursday, Jan. 9, at 8 P. M. Mr. Rufus F. Herrick, of Boston, author of "Denatured and Industrial Alcohol," will address the Society on "Denatured Alcohol," with special reference to its application in the arts. The address will be illustrated with lantern slides and demonstrations. All interested in the subject are invited to attend.

PROVISIONAL

Schedule of Semi-Annual Examinations, 1908.

Subject to Correction by Bulletin.

Last exercises will be held as follows: Fourth and Third Years on Saturday, January 18; Second Year on Thursday, January 23; First Year on Saturday, January 25.

Subject	Year	Examiner	Time	Rooms (R—Rogers, W—Walker, P—Pierce, A—Eng. A, B—Eng. B, C—Eng. C, L—Lowell)
Tuesday, January 21.				
1 Alt. Current. Mach. 650	4	Clifford	9-12	L—21, 25
2 European Civilization and Art. 175	4	Sumner	1.30-4 30	P—42
3 Hydraulics I, XI. 330	4	Porter	9-12	A—21, 22, 33
4 Inorganic Chem. 561	4	Fay	9-12	W—24
5 Metallography. 452	4	Hofman	1.30-2.30	R—2
6 Physics, Heat. 771	3	Norton	1.30-3.30	A—20, 21, 22, 31, 33, 47
7 Theory of Warship Design. 917	G	Hovgaard	9-12	C—33
Wednesday, January 22.				
1 Argumentation and Debate. 145	3	Pearson	1.30-3.30	R—11
2 Colonial Systems. 180	3	Currier	1.30-3.30	R—21
3 English Literature. 156	3	Bates	1.30-3.30	R—16
4 Economic History. 191	3	Doten	1.30-3.30	R—21
5 Electro-chemistry. 796	4	Goodwin	9-12	W—26
6 Etglish Bible. 160	3	Seaver	1.30-3.30	R—16
7 History of Science. 761	3	Sedgwick, Tyler	1.30-3.30	B—20; P—10
8 Hyd. II, III, VI, X, XIII. 331, 332	4	Mott	9-12	A—20, 21, 22, 33
9 Industrial Biology. 746	4	Prescott	1.30-4.30	P—28
10 International Law. 185	3	Currier	1.30-3.30	R—26, 27.
11 Political Economy. 190	3	Dewey, Doten	9-11	A—30, 47, 49, 53,54; P—10, 11, 14
12 Theory of Warship Design. 916	4	Hovgaard	9-12	C—33
13 Theory of Warship Design. 915	3	Hovgaard	9-12	C—33
Thursday, January 23.				
1 App. Mech. II, III. 1, 2 X, XIII, XIII. A. 80	4	Lanza, Fuller, Johnston	9-12	A—20, 22, 33
2 App. Mechanics VI. 82	4	Lanza, Fuller	9-11	A—31
3 Const. Design. 532	4	W. H. Lawrence	9-12	P—30A
4 Elec. Meas. Inst. 778	3	Laws	9-10.30	L—24, 28, 30
5 Fourier's Series. 52	4	Bailey	9-12	W—26
6 Metallurgy, Elementary. 443	4	Hofman	1.30-3 30	R—21
7 Precis. of Measurements	3	Goodwin, Drisko	1.30-3.30	R—21, 27, 33, 36
8 Prox. Tech. Anal. 629	4	Gill	9-12	W—26
9 Structures. 347, 348, 351	4G	Swain	9-12	B—41, 51
10 Textile Color. 630	4	Thorp	9-11	W—26
11 Topographic Geology. 874	3	Daly	1.30-4.30	A—21, 22, 31
12 Vertebrate Anatomy. 717	3	R. P. Bigelow	9-12	P—28
13 Zymology. 747	4	Prescott	1.30-3.30	P—28
Friday, January 24.				
1 Anal. Mechanics II. 96	4	Lanza	9-12	A—22
2 Applied Mechanics. 70, 74, 77	3	Fuller, Johnson, Hayward	9-12	A—22, 30, 31, 33, 47
3 Applied Mechanics. 72	3	Fuller, Johnson, Hayward	9-11	A—20, 21
4 Comp. Physiology. 727	4	Stiles	9-12	P—28
5 Electrical Engineering 657	4	Shad	9-12	L—24, 28, 29
6 European Civilization and Art. 176	G	Sumner	9-12	P—42
7 Foundations. 349	4	L. E. Moore	9-12	B—41, 51
8 Metallurgy of Iron. 441	2,4	Hofman	1.30-3.30	R—2, 21, 22, 27, 33, 36
9 Technical Chemistry. 635	3	Gill	9-11	W—26
10 Theoretical Chemistry. 610	3,4	Sherrill	9-12	W—20, 24
Saturday, January 25.				
1 Anthropology. 720	3	Winslow	9-11	P—28
2 Economic Geology. 859	3	Loughlin	1.30-4.30	P—11
3 Hydraulics XIII-A. 340	3	Mott	9-12	A—33
4 Industrial Chemistry. 580	4	Thorp	9-11	W—20, 24
5 Machine Design. 404	4	Schwamb	9-12	A—31, 33
6 Materials. 352	3,4	Swain	9-11	B—41, 45
7 Org. Chem. Lab. 599	4	F. J. Moore	1.30-3 30	W—26
8 Petrography. 843	4	Warren	9-12	P—13
9 Physics. 770	2	Cross	9-12	A—20, 21, 22, 30, 47, 49, 50, 53, 54; B—20, 21
10 Quantitative Analysis. 559	4	Fay, Hall	9-12	R—27
11 Ship Construction. 900	3	Leland	9-11	C—31
12 Surveying. 303	3	Robbins	1.30-3.30	A—49, 53, 54
13 Tech. Elec, Meas. 685	4	Laws	9 12	L—28, 30
Monday, January 27.				
1 Air, Water and Food Analysis. 565	3	Mrs. Richards, Woodman	9-11	W—26
2 Calculus Advanced and Geometry. 36	3	F.S. Woods	9-12	R—22
3 Dyn. of Machines. 401	4G	Lanza	9-12	A—22, 31, 31
4 Elec. Eng. Lab. 693	4	R. R. Lawrence	1.31-4.30	L—23, 24
5 El. of Elec. Eng. 655	3,4	Clifford	9-12	L—24, 25, 26
6 Ent. Physic		Drisko	1.30-3.30	R—2
7 European History. 173	2	Currier	1.30-3.30	R—21, 22, 26, 27, 33, 36, 42, 43
8 Heating and Ventilation. 413	3	Park	9-11	A—21
9 Metallurgy. 442	4	Hofman	9-12	R—26
10 Organic Prep. 598	4	F. J. Moore	1.30-3.30	W—24, 26
11 Quantitative Anal. 559	3	Fay, Hall	1.30-4.30	A—20
12 R. R. Engineering. 313	3	Allen	9-12	A—49, 53, 54
13 Steam Eng. I. 387	4	Miller	1.30-4.30	A—21, 22, 31
14 Theoret. Biology. 704	4	Winslow	1,30-4.30	A—31

Subject	Year	Examiner	Time	Rooms (R—Rogers, W—Walker, P—Pierce, A—Eng. A, B—Eng. B, C—Eng. C, L—Lowell)
Tuesday, January 28.				
1 Bacteriology. 744	3	Prescott	9-12	P—28
2 Descriptive Geometry. 100	1	Adams	9-12	R—2, 21, 22, 27, 33, 36, 42, 43, 50
3 Direct Cur. Gen. 654	3	Smith	9-11	L—23, 24, 25
4 Dynamo-Electric Mach. 661	3,4	Smith	9-11	L—26, 28, 29, 30
5 Electric Light & Tr. of Power. 663	4	Jackson	9 12	L—21, 22
6 English Literature. 150	2	Bates	1 30 3,30	R—2, 21, 22, 26, 27, 33, 36, 43
7 Locomotive Eng. 421	4	Lanza	9-11	A—21
8 Marine Engineering. 420	4	Peabody	9-11	A—21
9 Mill Engineering. 422	4	Schwamb	9-11	A—31
10 Organic Chemistry. 592	4	Mulliken	9-12	W—24, 26
Wednesday, January 29.				
1 Arch. History. 491	3	Homer	9-12	P—42
2 Arch. History. 490	2	Homer	9-11	P—30
3 Assaying. 432	3	Bugbee	9-12	R—26
4 Bridge Design. 355, 356	4	L. E. Moore	9-12	B—41, 51
5 Descriptive Geometry. Reg. & Special. 107	2	Adams	9-12	R—36, 42, 43, 50, 53
6 El. of Elec. Eng. 653	3,4	Smith	9-11	L—23, 24, 25
7 Ent. Solid Geometry		Bailey	9-11	R—33
8 Food Analysis Adv. 649	4	Woodman	1.30 3 50	R—21
9 Geology, General. 856	2	Daly	9-12	P—10. 11, 14
10 Heating and Ventilation. 414	4	Park	9-11	A—31, 33
11 Military Science. 990	1	Wheeler	1.30 2.30	R—22, 26, 27, 33, 36, 42, 43
12 Mining Engineering. 459	4	Richards	9-12	R—21
13 Naval Architecture. 901	3	Peabody	9-12	A—21
14 Organic Chemistry. 590	2,3	F. J. Moore	9-11	W—24,26
15 Ventilation and Drainage. 914	4	Park, Leland	9-11	A—22
Thursday, January 30.				
1 Bacteriology of Water and Sewage. 748	4	Winslow	1,30-3-30	P—28
2 Biology, General. 701	3	Sedgwick	9-10	P—28, 29
3 Ent. Algebra A		Bailey	1.30-3.30	R—21
4 Light, Gen. Th. 808	4	Comstock	9-12	R—44
5 Mathematics. 21	1	F. S. Woods	9-12	R—2, 21, 22, 27, 33, 36, 42, 43, 53
6 Mining Engineering. 458	3	Locke	9-12	R—26
7 Naval Architecture. 902	4	Peabody	9-12	A—47
8 Qualitative Analysis. 552	2	Thorp, Kneeland, Williams	9-12	L—22, 23, 24, 25
9 R. R. Engineering. 319	4	Allen	9-12	A—33
10 Spec. and Work. Draw. 480	2	Chandler	1.30-3.30	P—42
11 Steam Engineering. 385	3,4	Miller, Berry Riley	9-12	A—20, 21, 22, 23
Friday, January 31.				
1 Differential Calculus. 34	2	Tyler	9-12	R—2, 21, 22, 26, 27, 33, 36, 42, 43
2 Differential and Integral Calculus. 31	2	Passano	9-12	R—44
3 Ent. Algebra B		Bailey	9-11	R—53
4 Ent. English		Bates	11-1	R—53
5 Ent. French I.		J. Bigelow, Jr.	1.30-3.30	R—26
6 Micro-organisms. 709	3	Winslow	9-11	P—28
7 Sugar Analysis. 573	4	Woodman	9-11	W—20
Saturday, February 1.				
1 Biology, General. 700	2	Sedgwick	9-11	P—28
2 Descriptive Geometry (Sp. Class). 100, 101	1	Adams	1.30-4.30	R—43
3 Ent. German I.		Vogel	1.30-3.30	R—36, 42
4 Ent. History		Currier	11-1	R—22
5 Ent. Plane Geometry		Bailey	9-11	R—21
6 Water Analysis and Water Supplies. 568	4	Mrs. Richards	1.30-3.30	R—20

CONFLICTS, ETC.

Entrance condition examinations, all special examinations granted by the Faculty, and all examinations postponed from September are to be taken at this time, unless otherwise specifically authorized. Students entitled to examinations not on this schudule and those having two examinations on the same day should hand in **one of these schedules checked for all their examinations not later than January 16.** Assignments will be made for special examinations and new appointments for conflicts, which will be mailed to students on Saturday, January 18. None can be arranged later.

Reports will be mailed February 7 to students of age and to others not living at home to the **term residence,** also to the parents or guardians of students not of age. None can be given out verbally. Requests for duplicates will be received until January 22.

For the Faculty Committee on Examinations

WALTER HUMPHREYS, *Registrar.*

A PLAN FOR EXECUTIVE TRAINING.

(Continued from page 1.)

The plea I have to make is for a collateral preparation for practical things during student life as a part of the curriculum, which shall supplement the work in the classroom and laboratory and serve to adjust and balance, by enough practical responsibility to germinate the young man's judgment. I am persuaded that nothing can accomplish this except actual experience, but I am also persuaded that this actual experience can be had at the Institute of Technology with little loss of any valuable thing, and with an immense gain in the preparedness of the graduate to grasp the problems before him.

The idea of committee work in most of our larger and in many of our small industrial institutions is spreading rapidly because it has accomplished remarkable results when properly carried out. At the Institute The Tech, Technique, the Athletic Association, etc., are conducted by student committees, and are probably much better handled than if the Institute were responsible for them. These are called student activities; but is there any reason why student committees cannot be made useful, under competent direction, in conducting some of the material affairs of an educational institution, where the benefits would not only redound to the individual students, but also to the institution itself?

The men who become identified with these student activities gain something of the experience I have referred to, because they are dealing with real business problems, and they get some idea of the value of organization as well as some experience in management, of the greatest importance to them in after life. On the other hand, their view is confined to one particular direction, that in which they are immediately occupied, and these extra duties, which usually come in the Junior or Senior years, are almost too great to be undertaken in connection with their regular work.

What I would like to see accomplished is a consistent scheme of committee work which shall have a place on the tabular view, and which shall bring as large a number of men as possible within its influence, giving the students definite responsibility by placing the administration of the Institute's material affairs in the hands of a student democracy, the real control to be tactfully exercised by a resident engineer, who would thus be the head of one of the Institute's most important departments. The scheme I have to suggest may appear complex and somewhat revolutionary. When analyzed, however, it is nothing more than a division of details among committees, devoting a very small amount of time to a feature of education which will result in wonderfully broadening the men who come within its range and in giving every man in the student body a general idea of the value of business organization.

As I have indicated, the whole matter is to be in charge of a carefully selected resident engineer, in whom all responsibility and authority will be vested; the student body to be organized on the general plan of a large industrial corporation, with a Board of Directors chosen from the Junior and Senior Classes, and including the resident engineer. Under this executive body the administrative department will be headed by a general manager, either a Junior or a Senior, manager of buildings, manager of grounds, manager of athletics, manager of printing and publications, manager of student government, manager of operation and maintenance, etc. Under the manager of buildings will be manager of Building A, manager of Building B, etc., covering all the buildings within control of the Institute. There would also be sub-managers for each of the other departments, and an extension of the scheme to its limit would give the men some idea of general management, division of authority, relations of departments, theory of costs, inspection of material, and discipline. In fact, it would lead, more or less fully, into the various lines which are essential to the supplementary education of an engineer.

Although I have said that the real control would be vested in the head of the department, the resident engineer, I would have his guiding hand rest as lightly on the helm as possible. Inasmuch as all important matters would come before the Board of Directors of which he is a member, and as the deliberations are secret, it would be possible for him to direct diplomatically all action in that body as far as it was necessary for him to do so; but the student organization need not know how great or how little this influence is. The Board of Directors would stand for the centre of government, and the responsibilities of every unit in the organization would be real responsibilities. The less important positions would be given over to the Sophomores and perhaps some Freshmen. They would have a very limited amount of authority to do certain small things, and it would be obligatory upon them to see that these matters are attended to. Beyond a certain amount of expenditure or beyond a definite routine the manager of the department would be consulted. In cases more important the action of the General Manager would be necessary, and, where his authority was not sufficient, the Board of Directors would take action. Every order, however, would go through the resident engineer's office, so that the actions of each individual member of this body would be under his observation and control.

To carry out the matter still further and give more interest to the men, I would have two political parties, say the cardinals and the grays, the divisions to be made between courses or in some other way by the Board of Directors; each party to have caucuses and make nominations, say two or three nominations for each office to be filled, the Board of Directors to choose from these nominees, one candidate on each side for each position. In this case a Faculty Committee in connection with the resident engineer would probably make the real selection. It is understood, however, that the party divisions would change at each election period, so that no permanent competition would be established between particular courses or classes of students.

The nominations being made, each party would have a mass meeting on different days. The men nominated for the higher positions would probably have served in minor offices by way of preparation. Their administration of these offices would be public, and the reasons for or against their election would be the subject of free and open discussion. It is reasonable to suppose that the men finally elected would be suitable representatives for the various positions.

If this plan is properly carried out, the division of work assigned to each student can be increased or diminished as he is able to take it on. There would not be the same burden that rests on the managing editor of The Tech or on other men now at the head of student activities. It would probably be well to include the Dean as a member of the Board of Directors, and before action is taken by the Board some of the propositions should be taken before a Faculty Committee by the Dean and the resident engineer.

It would be necessary for the Board of Directors to meet regularly, say once or twice a week. The General Manager should meet with his cabinet once a week. The managers of different departments should meet with their sub-managers once or twice a week. There would be a general meeting of the entire organization once a month, or perhaps oftener, and perhaps twice during the term there should be a general mass meeting, when the Board of Directors would make a report to its constituents.

The doing of the various officers would be chronicled in a daily bulletin, so that the work of the organization would be constantly before every student. This of itself would be something of an education.

The cost of running the institution would be a matter for first consideration. This would lead to the general study of costs, which is of vital importance and which does not appear to have sufficient consideration at the present time. Lectures on this subject by various experts in different lines would be welcomed and studied with enthusiasm. Prominent officials of large corporations would be glad to talk to appreciative students about the business in which they are interested. It would bring the men in direct touch with the active minds of the industrial world, and they would have an opportunity to study the latest development in this broad field.

It seems obvious that such a plan would enlist the interest of the alumni, and many valuable suggestions and much assistance would come from that source.

It would be useless to attempt to carry out this work without the hearty enthusiasm of the students themselves. That this would be insured I have no doubt, because of the nature of the competition and the variety of fields of attraction. It is also to be considered that the men who have shown skill and ability in the higher offices of this student democracy would be marked men, and after graduation they would be sought for by employers all over the country. This would create the highest incentive, and would be conducive to scholarship as well, because certain qualifications of scholarship would be essential in order to hold office. By this I do not mean that scholarship should be alone considered. Men should be chosen for their ability to administer affairs of the institution with success. Nevertheless, scholarship would be an important item, and I cannot see why the carrying out of this proposed plan would not be beneficial to scholarship.

Another feature of this plan would be the advertising which would naturally follow, because the experiment would be of public interest and would attempt to fill a lack which is universally recognized. It would enlist the interest of wealthy manufacturers and others who would be attracted by the plan, and who would not only willingly offer the benefit of their own experience, but would provide means for properly carrying it out. I further think that the carrying out of this plan would instill into the student body a sustaining enthusiasm that would spring from the very love of the work itself,—not the work of the student committees or any feature of it, but the work of the Institute itself as a grand, well-rounded whole.

ISAAC W. LITCHFIELD, 1885.

THE STANDARDS TO BE PLACED BEFORE THE YOUNG ENGINEER.

A major reason for the ineffectiveness of much of our public schooling is that teachers and pupils have their eyes and thoughts fixed, not upon the real purpose of education, but upon the examination of next week or the production of next June. The school and its processes become to them, therefore, ends in themselves. The petty lessons which they teach and learn obscure the broad objects of teaching and of learning, and the walls of the school-room limit their educational horizon. To neither such teachers nor such pupils is it ever revealed that schooling is but a minor means to the true end of education, which is, of course, physyical, mental, moral, and therefore social, efficiency.

The students in a school of applied science have a wider view than this; but in most cases it is an outlook far too narrow. They are aiming, it is true, towards the goal of a professional career; but they usually see in that future profession, not an opportunity for social usefulness, not the happiness which is reached through efficiency, not the unselfish devotion of (for example) the "born" physician: they anticipate, on the contrary, merely the power, the money and the ultimate ease which professional success may bring. Therefore, few undergraduates study the subjects in the curriculum because they care for them or because they grasp the relation between those topics and the social organism. They pursue them simply because those subjects must be overleaped —like obstacles in a hurdle race—by the irksome process called examination, in order to secure a degree. The degree itself they look upon as an end worth working for, since its possession means, usually, a renumerative "job," which will lead to others, bringing in, eventually, an income adequate to the multitudinous expenditures of modern life.

Were this the attitude of mind of technological students alone, it might justify—or at least explain—the sometimes supercilious attitude of the college of "liberal arts," and might support its contention that its atmosphere is broadly cultural, while that of the college of science is narrowly utilitarian. Under modern conditions, however, the outlook of all collegians is practically the same; for, however fondly the older institutions may cling to outworn forms and terms, however prominently the "humanities" may stand out in their prospectuses, they also are, in truth, colleges of modern science and of application of science to commercial and industrial life. The cloistered student wrapped in love of ancient learning is still to be found; but he is engulfed in the host of youth who, when they do not go to college simply for sociability and prestige, regard higher education as a kind of trump card in the game of money-making.

More or less unconsciously, colleges of arts and colleges of science alike foster this student attitude of mind by devoting an undue share of the academic year to examinations, by overloading the curriculum with examinable subjects, and by permitting the several schools or departments to emphasize the utilitarian by specializing and intensifying too much. As a result, the secondary purpose of a college—that of instilling information—too often bulks largest in the eyes of all concerned, and obscures or even eclipses the leading aims of all collegiate education.

Those major aims should be, in the order of their importance: (1) to develop manhood out of boyhood; (2) to make the men thus developed broad-gauged, mentally quick and receptive, intellectually catholic, tolerant and modest; (3) to train good citizens, in the fullest meaning of that term; and (4) to equip for industrial and professional efficiency. To accomplish the last is what the technological school is paid especially to do; but, unless that professional training is given in such a way as to supplement and strengthen in the highest degree all the other social forces which are making for manhood, breadth and citizenship, the school has defrauded the undergraduate, has failed of his duty as a social agent and has sealed its own doom.

Even though they be nineteen or twenty years of age, most youths come to a college mere boys in their childish attitude of mind, their undeveloped sense of personal responsibility, their hazy outlook upon life and their distorted perspective of themselves in the community. They ought to be graduated, however, with their minds ripened and their vision cleared. Indeed, the years of their college life will have been largely wasted unless, in those years, they have acquired a mental and moral seriousness far greater than that of the less well-educated man.

Limiting ourselves to the school of applied science, perhaps its paramount duty and opportunity is to impress upon a youth as he enters manhood the fact that living, instead of being a game of pleasure or of chance, or a haphazard acceptance of what comes along, is an actual profession,—is, indeed, the leading vocation of every man,—a profession to be studied, perfected and strategically planned with interested thoroughness and far-seeing care. This right view of life can be instilled, not only by giving the college youth ever wider choice of work, initiative in working and responsibility for the quality of his work (while holding him to a rational and ordered sequence of development), but also by teaching him such things and in such a way as to make him increasingly aware of a man's power over circumstance, and of the multiform opportunity which every individual has to shape his own career.

Another chief use of the education given in a scientific school should be to expand a young man's vision, to teach him the difference between the small and the great things of life, to train him to see the world from a clear mountain peak of intellectual tolerance rather than from a foggy valley of personal prejudice. This breadth and catholicity can be inspired by building all his professional and technical training upon basic truths and principles; by framing his courses of study upon those fundamental historical, philosophical and linguistic subjects which (quite too exclusively) made up the college course of half a century ago; and, most of all, by seeking every opportunity to impress upon each student the fact that what makes for leadership and power in professional life is not familiarity with technical details and an extraordinary memory for formulas, but ability to view questions in a large way, to deal with new problems, to handle subordinates easily and justily, to meet equals and superiors tactfully and upon the broad platform of many human as well as professional interests.

A student will not have secured seriousness and breadth, however, if on graduation he believes that his professional training is to be used wholly to satisfy his personal—and very proper—ambition for power and for wealth. He must also have been made to realize that, being an extraordinary debtor to society, he owes an immense debt of future service to the community. He should also have learned that the main business of an educated man is to grow into wide usefulness by practising the "gregarious" virtues, by placing his abilities as far as possible at the service of his neighborhood and State, by increasing the five talents of his collegiate training into the many times ten talents of personal and social power. To this end his technical and his non-technical teaching should have emphasized those subtle, unselfish, moral qualities which lie at the foundation of profes-

(Continued on page 5.)

THE STANDARDS TO BE PLACED.

(Continued from page 4.)

sional ethics, engineering honor and true devotion to the good of the State.

Whatever may be the sequence of studies, the ramification of "electives," or the emphasis upon this detail or upon that, the student should never be allowed to become so confused by these minutiae as to lose sight of what he goes to a school of applied science for. In the student's own mind he goes primarily to obtain certain information, a measure of technical skill and a scientific jargon which will enable him to secure and to hold some renumerative professional position. If this mental attitude is not rectified, or is encouraged by the placing of too much emphasis upon technical information, "knacks," formulae and phrases, the youth will devote himself zealously, even enthusiastically,—but none the less fatally,—to things which, without the higher aims, are but the chaff of education. The strongest evidence of a Freshman's lack of education is that he does not know how to appraise those tasks which he must or may do, but that he does not understand what the world is going to demand of him as the price of real professional success.

To educate him, therefore,—in the right meaning of education—the school of applied science must not content itself with giving him that technical information which, to his untrained vision, is all that he requires; it must hold before him and must teach him to understand the value and importance of those higher standards by which his work as a man and as an engineer will be judged by his future employers, by his associates and by the world at large. He cannot foresee, therefore he must deliberately be made to appreciate, that behind and underneath his technical information and scientific skill he should possess at least three other things; seriousness of view, breadth of mind and a sense of civic responsibility. With the first he will learn how to measure and control his own life; with the second he will learn how to weigh the lives of others; with the third he will learn how to place himself and all he does into right perspective with the whole order of society; and with all three together he will be ready to meet and conquer practically every one of those problems, moral, social, or technical, with which his life is certain to be filled.

To keep these large purposes and true aims of education before themselves and their students is extremely difficult for the teaching staff, engrossed as they must necessarily be in the thousand details of teaching and discipline, and hounded as they are from without and within to equip their students (like automobiles) with every latest device for technical speed and efficiency. That the faculties of most schools of technology have been able to preserve the wider view is cause for wonder and congratulation. With the greater specialization and haste of modern life, however, they will find this to be increasingly difficult unless they receive organized and unflagging help from those who stand far enough from the details of instruction to see that teaching in proper perspective and to measure its real results. The two bodies near enough to the school of applied science to understand its internal methods and aims, and yet far enough away from it to gauge its final influence upon young men and its ultimate effect upon the industrial and social structure, are, of course, the Trustees and the alumni. In every way possible they should identify themselves with their college and its undergraduates; and, while refraining from interference with the details of courses or of teaching, should keep clearly before the students those real aims and ends of all higher education which their experience of life should have made them clearly see. Just how they are to do this is not within the present scope even to suggest. Moreover, no two colleges of science would approach the problem in the same way. But that these high standards must be held before the undergraduates of all such colleges, and that the Trustees and alumni must give conspicuous help in doing so, are, I think, self-evident truths in higher education.

JAMES PHINNEY MUNROE, '82.

TECHNOLOGY WELL REPRESENTED IN CHICAGO.

Professor Talbot has just returned from Chicago where he attended the meetings of the American Association for the Advancement of Science, and of the American Chemical Society. He is vice-president of the latter and acted as chairman of Section C, presiding at several meetings. Technology was also represented by Professors Prescott, Bartlett, Swain and Woods.

PROFESSOR SEDGWICK HONORED.

Professor William T. Sedgwick of the Institute has been elected to the advisory council of the Massachusetts Civil Service Reform Association.

CALENDAR.

Wednesday, January 8.

6.30 P. M. Society Dinner at the Union.

Thursday, January 9.

1.00 P. M. Cross Country Picture at Notman's, 3 Park St.
1.30 P. M. Weekly Y. M. C. A. Meeting in Trinity Church Library.
4.00 P. M. Tech Show Poster Competition Closes.
4.00 P. M. Prof. Swain's Reading in 6 Lowell.
4.00 P. M. Banjo Club Rehearsal in 33 Rogers.
4.00 P. M. Glee Club Rehearsal at the Union.
8.00 P. M. Society of Arts Meeting in 22 Walker.

Friday, January 10.

4.15 P. M. Mandolin Club Rehearsal in 31 Rogers.
7.00 P. M. Annual Alumni Dinner at the Brunswick.
8.00 P. M. Interclass Indoor Meet at the Gym.
8.00 P. M. Musical Clubs Concert at Dorchester.

FACULTY NOTICE.

FIRST YEAR STUDENTS.—The following hours have been arranged for conference between the Heads of Departments and first year students, relative to choice of course. These conferences are intended to be very informal and to give the individual student a chance to obtain any information that he may desire in regard to the various Courses before making his final choice.

Courses I and XI, Prof. Swain, Monday, January 13 at 4 p. m. in 49 Eng. A.

Course II, Prof. Lanza, Tuesday, January 14 at 4 p. m. in 11 Eng. B.

Course III, Prof. Richards, Wednesday, January 15, at 4 p. m. in 2 Rogers.

Course III, Option 3; (see XII.)

Course IV, Prof. Chandler, Monday, January 20, at 4 p. m. in 42 Pierce.

Courses V and X, Prof. Talbot, Friday, January 10, at 1.30 p. m. in 6 Lowell.

Course VI, Prof. Jackson, Tuesday, January 14, at 4 p. m. in 6 Lowell.

Course VII, Prof. Sedgwick, Saturday, January 18, at 12 m. in 28 Pierce.

Course VIII, Options 1 and 2; Prof. Cross, any day at 12.15 p. m., or by appointment.

Course VIII, Option 3; Prof. Goodwin, Monday, January 13, from 1.30 to 2 p. m. or 4 to 4.30 p. m. in 11 Walker.

Course IX, Prof. Currier, Monday, Tuesday, Thursday or Saturday from 10 a. m. to 12 m. in 31 Rogers.

Course XII and III, Option 3; Prof. Jaggar, Wednesday, January 15, from 1.30 to 2 p. m. in 11 Eng. B.

Course XIII, Prof. Peabody, Thursday, January 9, from 1.30 to 2 p. m. in 31a Eng. C.

CLASSIFIED ADS.

Advertisements of this kind under different classifications are inserted at the rate of five cents a line, averaging six words to a line, payable in advance.

FOR RENT.—Small room on upper floor; steam heat and gas. Suitable for student. $1.75 per week. Apply 163 Huntington Ave., Suite two.

TYPEWRITING.—Special rates to students. 130 Pembroke St. Tel. 1385-1 Tremont.

WANTED AT ONCE.—Copies of the first six volumes of Technique in good condition. State price. Box 52, The Cage.

WANTED.—A student may have free room rent by applying to W. A. C. "Cage."